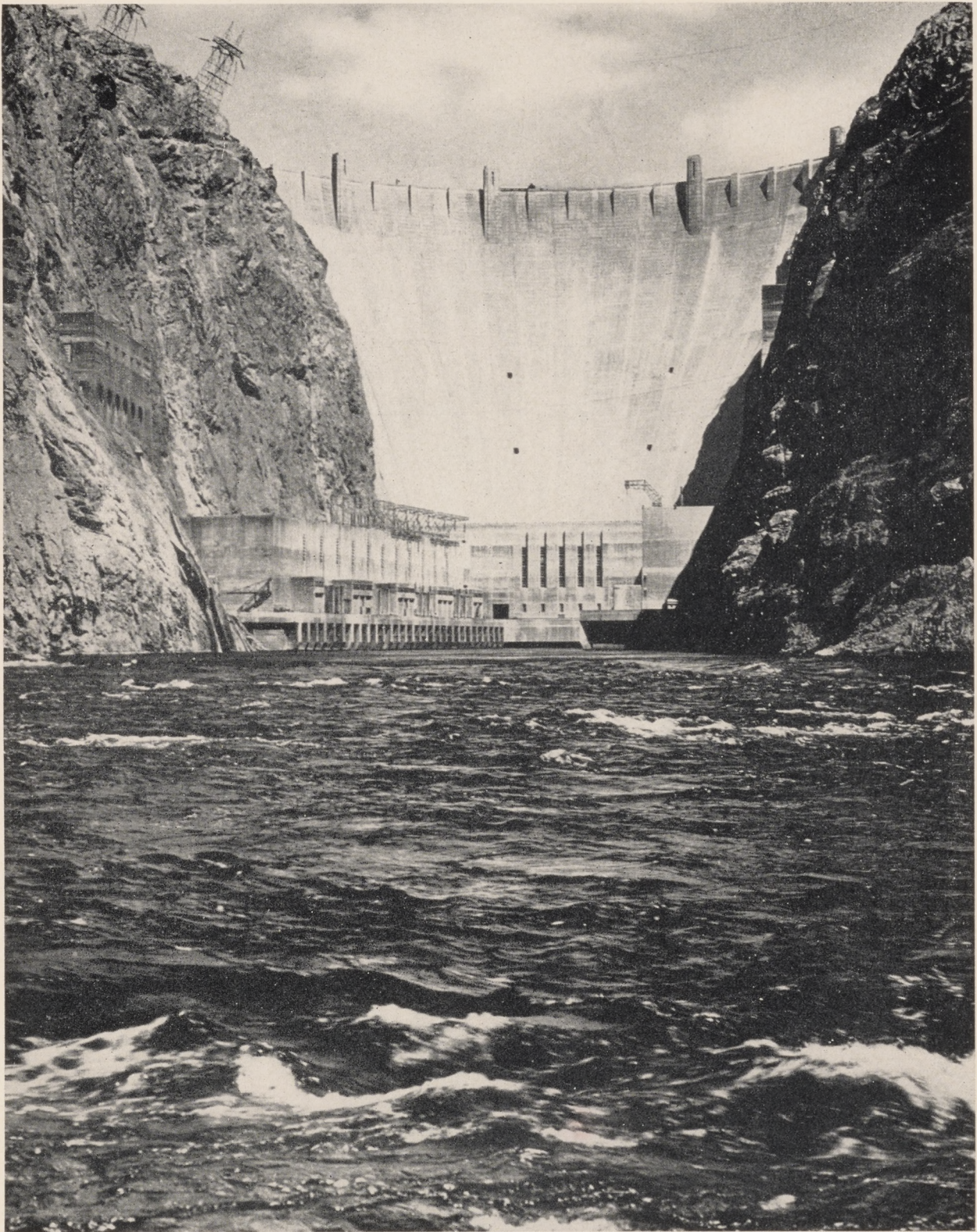
An aerial photograph of the Colorado River flowing through a deep, rugged canyon. The river is a vibrant blue, contrasting with the reddish-brown and tan hues of the surrounding rock formations. In the lower-left foreground, the Hoover Dam is visible, a massive concrete structure with a spillway. The canyon walls are steep and show distinct geological layering. In the distance, more mountain ranges are visible under a hazy sky.

California

and the

Colorado River



Hoover Dam, keystone of Colorado River development

California and the **Colorado River**

Foreword

The Colorado River is a vital source of water supply to seven states of the United States and the Republic of Mexico. How and where it is used will influence the development of cities and farms and will affect the destinies of millions of persons.

This booklet sets forth some of the basic facts concerning that remarkable river. It tells how the people of California have planned and built public water systems to make the best possible use of their share of the Colorado River's limited flow. Also, the booklet discusses the controversy between Arizona and California over their respective rights to water from the Colorado River. This struggle for water is of national interest because of the added tax burden of \$2,075,729,000 that would fall on American taxpayers if Arizona should get Congressional approval of the costly irrigation project it has asked the Government to build.



COLORADO RIVER ASSOCIATION

306 West Third Street

Los Angeles 13, California

1954

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COLORADO RIVER

The Colorado River is one of the major rivers of the United States and the largest river in the Southwest. Its main stream flows for 1,700 miles within the United States and 50 miles in Mexico, where it empties into the Gulf of California. With its tributaries, it flows through or forms the boundaries of seven states of the Union, namely, Colorado, Utah, Wyoming, New Mexico, Nevada, Arizona, and California.

TRIBUTARIES

Largest of the tributaries of the Colorado River is the Green River, which flows through Wyoming, Colorado, and Utah. Another principal tributary is the San Juan, which drains mountain slopes and plateaus in Colorado and New Mexico. And in the upper reaches of the river's system there are the Gunnison, the Yampa, Little Colorado, the White, Duchesne, Price, and San Rafael rivers. Below the Grand Canyon, the Virgin River joins the Colorado, and still further to the south are the Williams and Gila rivers.

BASIN AREA

The basin of the Colorado River covers one-twelfth of the entire land area of continental United States. It has a total area of 252,000 square miles, with 250,000 square miles within the United States and 2,000 square miles within the Republic of Mexico.

The river rises in the snowcapped western slopes of the Rocky Mountains. In these lofty mountain areas there are hundreds of peaks reaching up more than 13,000 feet, and many exceeding 14,000 feet in elevation. After rushing down the slopes of countless mountain ridges, the river enters a series of deep canyons. It travels a good part of its length in gorges and chasms cut hundreds and sometimes thousands of feet below the adjacent mesas and plateaus. Most famous of these canyons is the spectacular Grand Canyon of the Colorado. Here the river has carved out a channel more than a mile deep. Guide books of world travelers list it as one of the great wonders of the world.

In the lower 200 miles of its length the river passes down through relatively flat mesas and valleys. It is the only river with tributaries entirely within the United States which travels for the greater part of its course through desert country. It is a vital water supply source for the states within its basin, and is the only water source for large areas in Nevada, Arizona, and California.

DISCOVERY OF RIVER

While searching for the fabled Seven Cities of Cibola, then believed to be "somewhere north of Mexico," Captain Hernando Alarcon discovered the Colorado River in 1540. It was given the name El Rio Colorado by Father Garces, one of the band of dauntless missionaries who entered the desolate Colorado River desert country in the latter part of the Eighteenth Century to bring the Cross to the Indians living there. For more than three centuries following its discovery, the Colorado remained a river of mystery.

EARLY IRRIGATORS

There is a great deal of evidence to indicate that the Colorado River basin was widely populated thousands of years before the coming of the white man, and that at various places in the Southwest extensive irrigation works were built by these early people, and water from the river and its tributaries was used for the growing of crops. Most of these ancient people had disappeared before the coming of the white man, and there are strong indications that in many cases they were forced to leave because of protracted droughts.

LATER DEVELOPMENT

The first use by white men of water from the Colorado River and its tributaries for irrigation purposes came about in the middle of the Nineteenth Century. The Mormons in Utah were among the first pioneers to use water from the Colorado River tributaries for irrigation of lands on a large scale. Among the modern irrigation projects stemming from the Colorado River, the Palo Verde district in California was one of the first to use water from the main stream, starting as far back as 1877. Large-scale development on the Colorado River and its tributaries, however, did not get under way to any great extent until after the Reclamation Act was adopted by Congress in 1902. That was more than fifty years ago, but the great water and power projects now in operation on the lower Colorado were first set under way only about twenty-five years ago.

FLOOD MENACE

Prior to the construction of Hoover Dam, the Colorado River for uncounted centuries had been roaring down the mountain canyons and across desert plateaus of the Southwest, a mad water giant that destroyed with its annual floods all of man's works that chanced to be in its wayward path. In the quantity of water it carries in various seasons of the year, it is one of the most variable in America. Before its waters were harnessed by Hoover Dam, the quantity of water in the lower river varied from devastating floods running as high as 200,000 cubic feet per second to a mere trickle in the late summer and early fall.

THE 1905 FLOOD

In 1905, flood waters of the Colorado River broke through the levees in Imperial Valley and inundated hundreds of thousands of acres of fertile land. The flood waters broke away from the river channel and flowed back inland to form the Salton Sea. It was possible for this to occur for the reason that Imperial Valley is below sea level, some parts as much as 250 feet.



View of Colorado River below Parker Dam

After the 1905 flood, efforts were made to obtain authority from Congress to construct a dam on the lower Colorado River that would control the flood waters and conserve them for beneficial use.

HOOVER DAM LEGISLATION

Exhaustive studies were made by the U. S. Bureau of Reclamation, and in 1921 the Boulder Canyon Project Bill was first introduced in Congress. It was finally enacted into law in 1928 and provided for construction of what is today Hoover Dam and power plant. Hoover Dam is a multiple-purpose dam. It regulates the flood waters of the Colorado River, conserves this water for irrigation and domestic use, and produces a large block of hydroelectric energy.

COLORADO RIVER COMPACT

When the Boulder Canyon Project Bill was introduced in 1921, it met the opposition of states in the upper basin of the Colorado River. They feared that the conservation of Colorado River flood waters in the lower basin would give the lower basin states an opportunity for rapid and extensive development before the upper basin states could put large quantities of river water to beneficial use. This opposition led to the drafting in 1922 of the Colorado

River Compact. This Compact divides the waters of the Colorado River system between what is called the Upper Basin States and the Lower Basin States. To the Upper Basin States it apportions 7,500,000 acre feet annually, and to the Lower Basin States it apportions 7,500,000 acre feet annually. It also gives to the Lower Basin States the right to use an additional 1,000,000 acre feet annually. The Upper Basin States include Colorado, Utah, New Mexico, Wyoming and a few square miles of Arizona. The Lower Basin States include Arizona, California and Nevada, and small portions of New Mexico and Utah.

Shortly after it was drafted, the Compact was ratified by all of the basin states except Arizona. That state delayed ratifying the Compact until 1944, 22 years later. The question has been raised as to whether this action taken by Arizona after 22 years' delay actually constitutes a valid ratification of the Compact by that state.

MEXICAN WATER TREATY

In 1945 the United States Senate ratified a water treaty between the United States and the Republic of Mexico. The treaty had to do with the division of waters of the Colorado River and the Rio Grande, as between the two countries. The treaty provides that Mexico shall be guaranteed 1,500,000 acre feet of Colorado River water annually, plus 200,000 acre feet when there is considered to be a "surplus." California and Nevada opposed the treaty because they maintained that Mexico was entitled to no more than 750,000 acre feet of water, since that country never had used or been able to use more than that amount annually prior to the regulation of the stream by Hoover Dam. It was also shown by California and Nevada that the annual delivery of 1,500,000 acre feet of Colorado River water to Mexican landowners would invade the long-established Colorado River water rights of American citizens. Arizona opposed the California and Nevada position and sided with the treaty advocates. The result has been to further deplete the limited flow of the Colorado River.

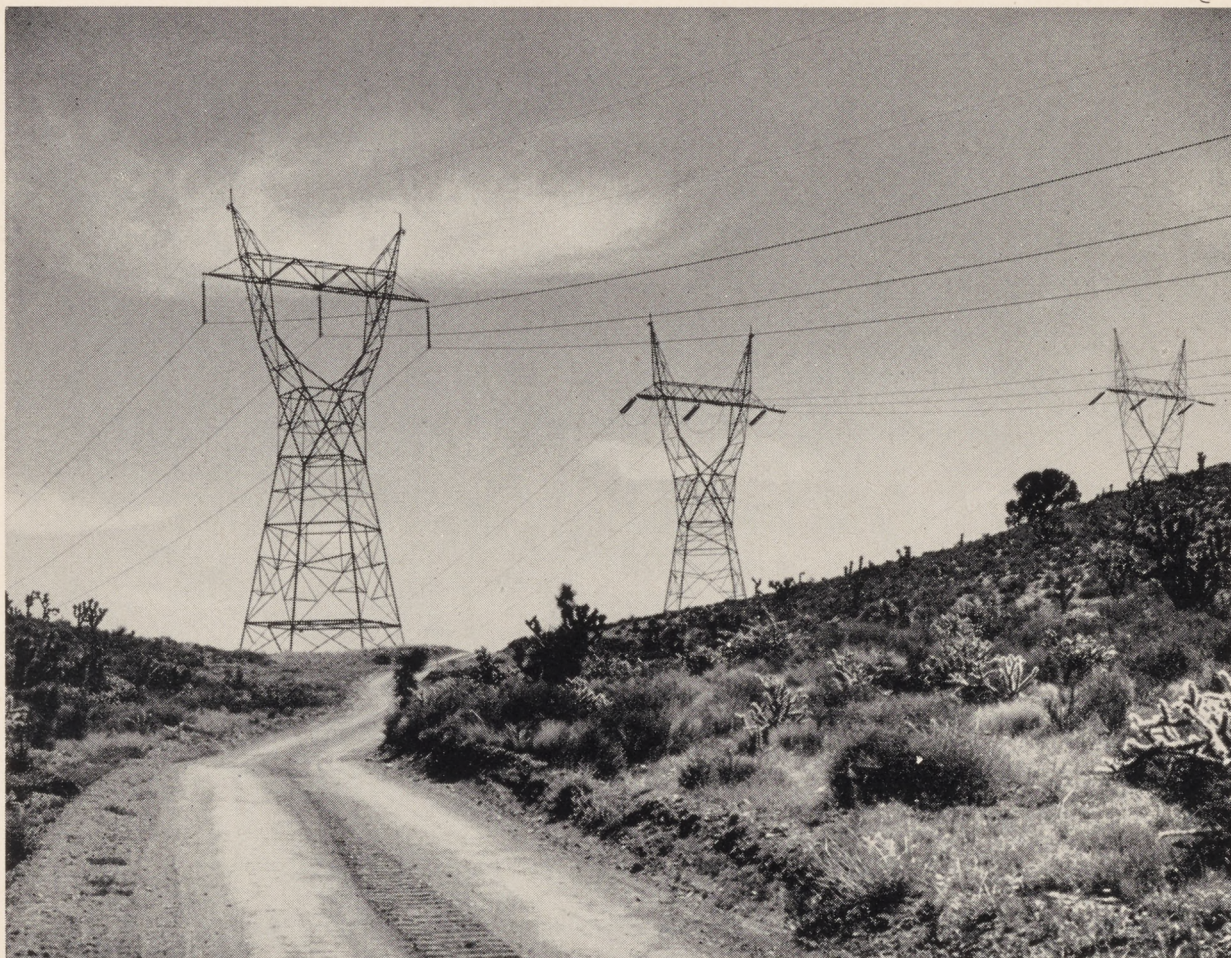
HOOVER DAM

Hoover Dam, standing 727 feet high, has created Lake Mead, largest reservoir in the United States, with a storage capacity of 32,000,000 acre feet. Including the power plant, its estimated total cost is \$173,000,000. It blocks a deep canyon section of the river where it forms the boundary between Arizona and Nevada.

Hoover Dam differs in one important respect from many other river development projects in the United States. It was not built at the expense or risk of the general taxpayers of the country.

Congressional legislation authorizing Hoover Dam provided that before it could be erected, the Secretary of the Interior must obtain firm contracts for the sale of Hoover power sufficient to repay construction costs, plus interest, within 50 years. California communities and private power companies signed such contracts and agreed to pay, and are paying for fixed quantities of power whether used or not. Total repayments made to the government to May 31, 1953 amounted, in round figures, to \$75,000,000. Of that amount, \$18,000,000 was credited against the Government's investment and \$57,000,000 was for interest charges.

Construction of Hoover Dam was authorized by the Boulder Canyon Project Act (Swing-Johnson Bill) passed by Congress in 1928. Work on the dam started in the summer of 1931 and it was completed in 1935. It began the generation of power in 1937.



Hoover Dam power transmission lines of the
Los Angeles Department of Water and Power

HOOVER DAM POWER

The public and private agencies that have contracted to take Hoover Dam power are the Department of Water and Power of the City of Los Angeles, The Metropolitan Water District of Southern California, City of Glendale, City of Burbank, City of Pasadena, Southern California Edison Company, and the California Electric Power Corporation.

Hoover Dam power plant is one of the largest in the world. Its output of power has reached 1,250,000 kilowatts. Of the total firm energy production, 65 per cent is purchased for use in Southern California communities and the other 35 per cent is used in Arizona and Nevada. All secondary energy generated at Hoover Dam Power Plant is used in Southern California. About 20 per cent of all the electric energy consumed in Southern California communities comes from Hoover Dam.

To bring Hoover Dam power into the consuming sections of Southern California, public and private agencies buying the energy have constructed hundreds of miles of high voltage transmission lines at a cost of \$56,000,000.

PUBLIC AGENCIES WITH COLORADO RIVER CONTRACTS

Five Southern California public agencies have water and power rights on the Colorado River. These agencies are:

DEPARTMENT OF WATER AND POWER OF THE CITY OF LOS ANGELES
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
IMPERIAL IRRIGATION DISTRICT
COACHELLA VALLEY COUNTY WATER DISTRICT
PALO VERDE IRRIGATION DISTRICT

Each of the above named agencies and the San Diego County Water Authority are represented by membership in the Colorado River Board of California. The Board is an agency of the State, established for the purpose of representing the people of California in their rights to a portion of the water of the Colorado River.

DEPARTMENT OF WATER AND POWER OF THE CITY OF LOS ANGELES

The Department of Water and Power operates the city-owned water and power systems of the City of Los Angeles. It has contracts with the Government for a large block of power from Hoover Dam. In fact, at the present time, about 40 per cent of all the power generated at Hoover Dam is purchased by this municipally-owned electric system and is distributed to domestic, industrial and business consumers in Los Angeles.

The Department is one of the two agencies which operate the power plant at Hoover Dam, under contracts with the Government. In addition to the energy which it generates for its own lines, the Department generates the power purchased by all the other public agencies. The other generating agency is the Southern California Edison Company, which generates for its own lines and for the other private agencies purchasing Hoover Dam power.

The power system of the Department of Water and Power is the largest city-owned electric system in the United States. All electric energy distributed to consumers in the City of Los Angeles is provided by the Department's power system.

In addition to its allotment of Hoover Dam power, the Department generates energy at its hydroelectric power plants on the Owens River Aqueduct and at two steam plants. A new source of electricity to meet ever-increasing demands has been provided by the construction of the Owens Gorge Hydroelectric Project, consisting of three power plants. This project was completed in 1953 and is in full operation. Under construction in San Fernando Valley at the present time is the Valley Steam Plant with two generators scheduled to be placed in service in 1954. When the Valley Steam Plant is completed in 1955 it will



Los Angeles with its 2,000,000 people is served water and power by its city-owned Department of Water and Power

have four generators with a combined capacity of 512,000 kilowatts. Even with these large additions to the city's generating facilities, it is estimated that additional generating capacity will have to be ready by about 1957. The Colorado River can provide an increased power output through the contemplated installation of another 104,000 kilowatt generator at Hoover Dam Power Plant and through the construction of new power dams at Bridge and Glen Canyons. The latter two plants have a potential generating capacity of 1,550,000 kilowatts. The Department of Water and Power would be a logical purchaser of a part of this energy but it strongly opposes attempts being made to require these proposed public power projects to subsidize irrigation projects for the special benefit of private landowners in Arizona or elsewhere.

The water system of the Department serves 98% of all water consumers in Los Angeles, and its distribution system covers the largest area of any single city water works. It obtains its water from four sources. They are the local underground basins, the Los Angeles River, the Owens River Aqueduct, and the Colorado River Aqueduct. Los Angeles is a part of The Metropolitan Water District of Southern California, and its city-owned water system therefore obtains its Colorado River water from the aqueduct operated by the Metropolitan Water District.

HOW COLORADO RIVER WATER SERVES SOUTHERN CALIFORNIA

CITIES SERVED BY THE METROPOLITAN AQUEDUCT

LOS ANGELES COUNTY

Beverly Hills	La Verne
Burbank	Long Beach
Claremont	Los Angeles
Compton	Manhattan Beach
El Segundo	Palos Verdes Estates
Gardena	Pasadena
Glendale	Pomona
Glendora	Redondo Beach
Hawthorne	San Marino
Hermosa Beach	Santa Monica
Inglewood	Torrance

ORANGE COUNTY

Anaheim	La Habra
Buena Park	Newport Beach
Brea	Orange
Costa Mesa	Placentia
Fullerton	Santa Ana
Huntington Beach	Seal Beach
Laguna Beach	Tustin

RIVERSIDE COUNTY

Hemet	Perris
	San Jacinto

SAN BERNARDINO COUNTY

Chino	Ontario
Fontana	Upland

SAN DIEGO COUNTY

Chula Vista	La Mesa
El Cajon	National City
Escondido	Oceanside
	San Diego

CITIES IN AGRICULTURAL AREAS DEPENDING UPON COLORADO RIVER WATER

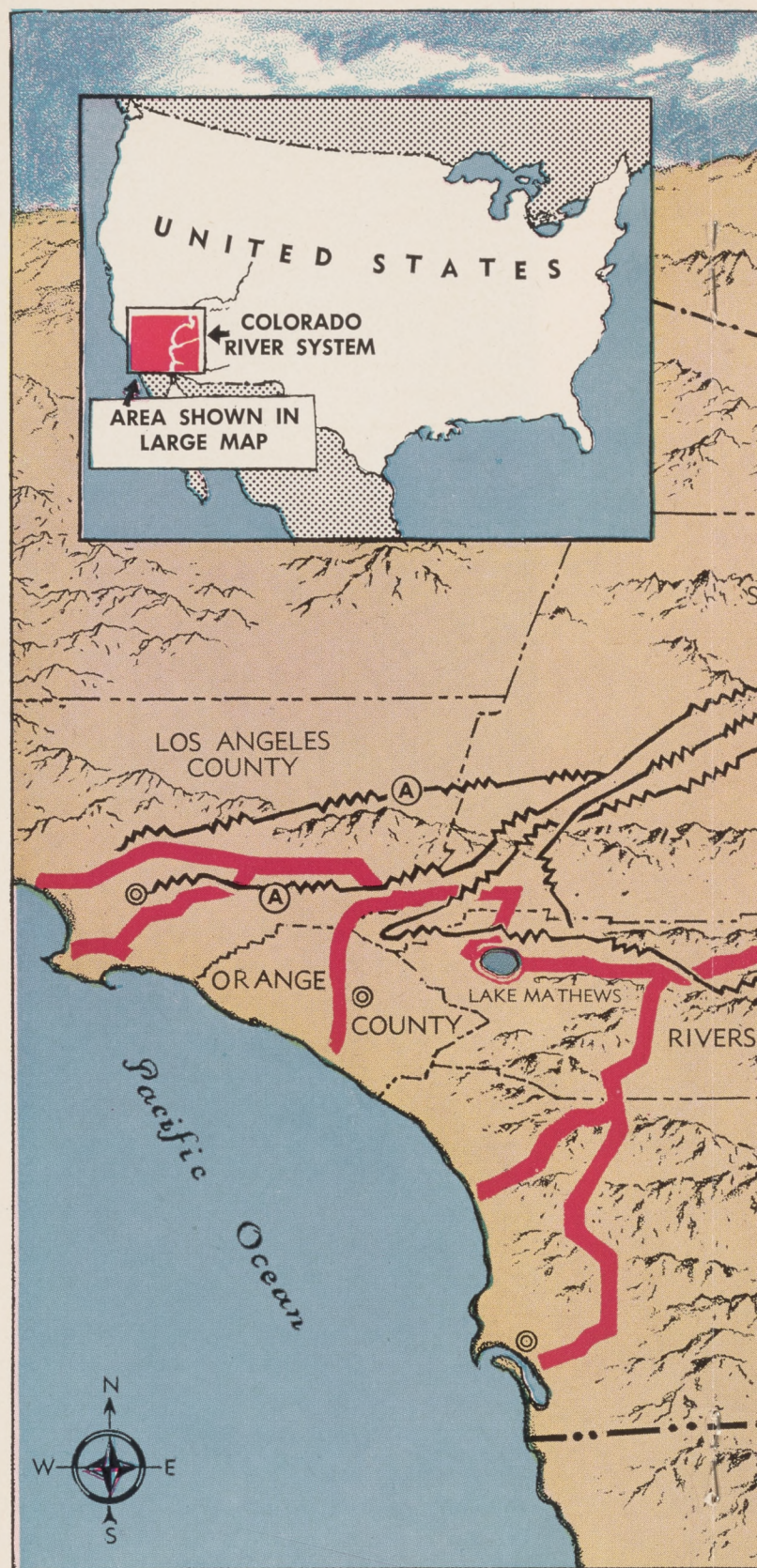
IMPERIAL COUNTY

Bard	Heber
Brawley	Holtville
Calexico	Imperial
Calipatria	Niland
El Centro	Westmorland

RIVERSIDE COUNTY

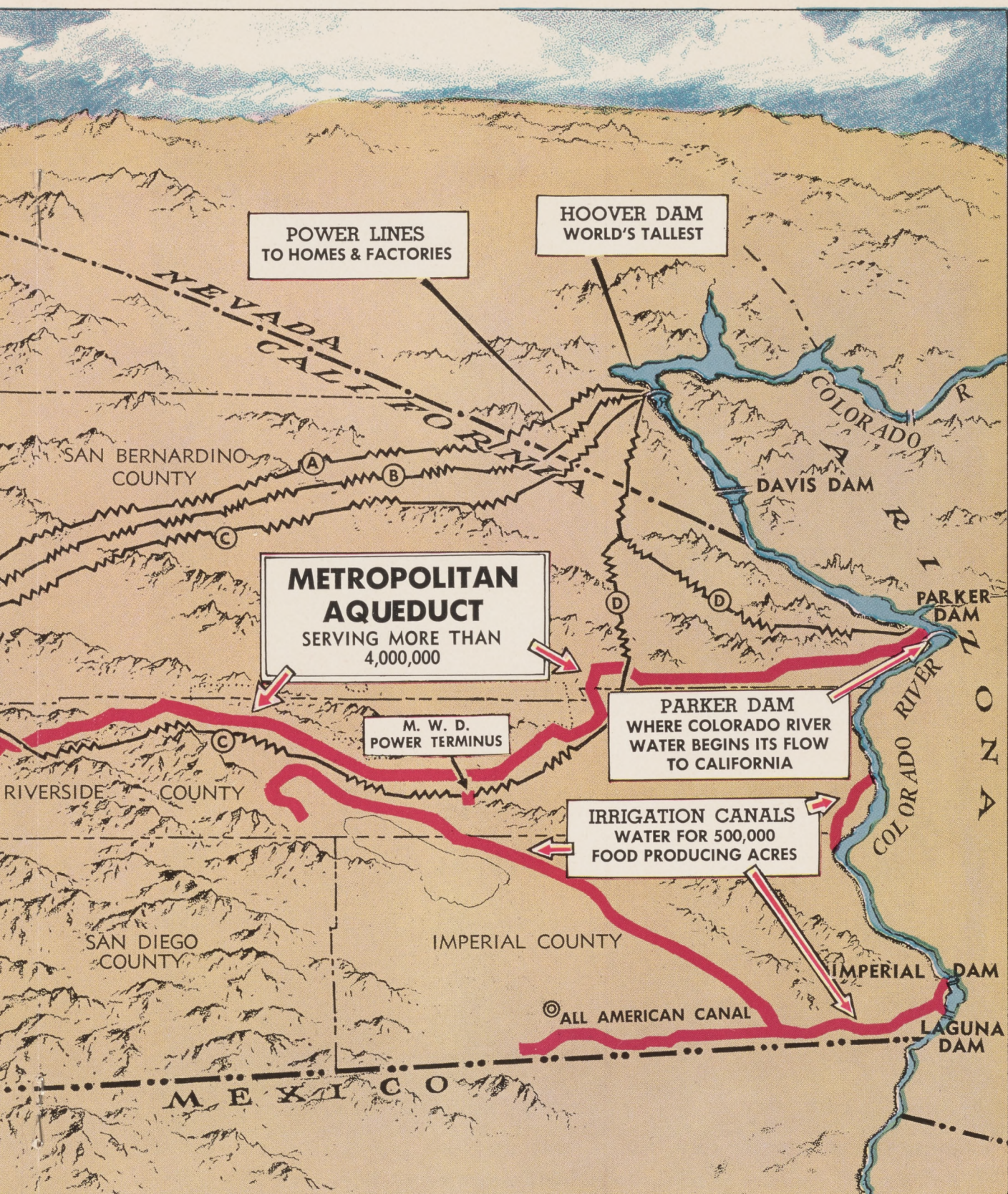
Blythe	Indio
Coachella	Mecca
	Thermal

Original cost of water and power units shown on map is more than \$500,000,000. Full repayment of this investment is being made by the people of Southern California.

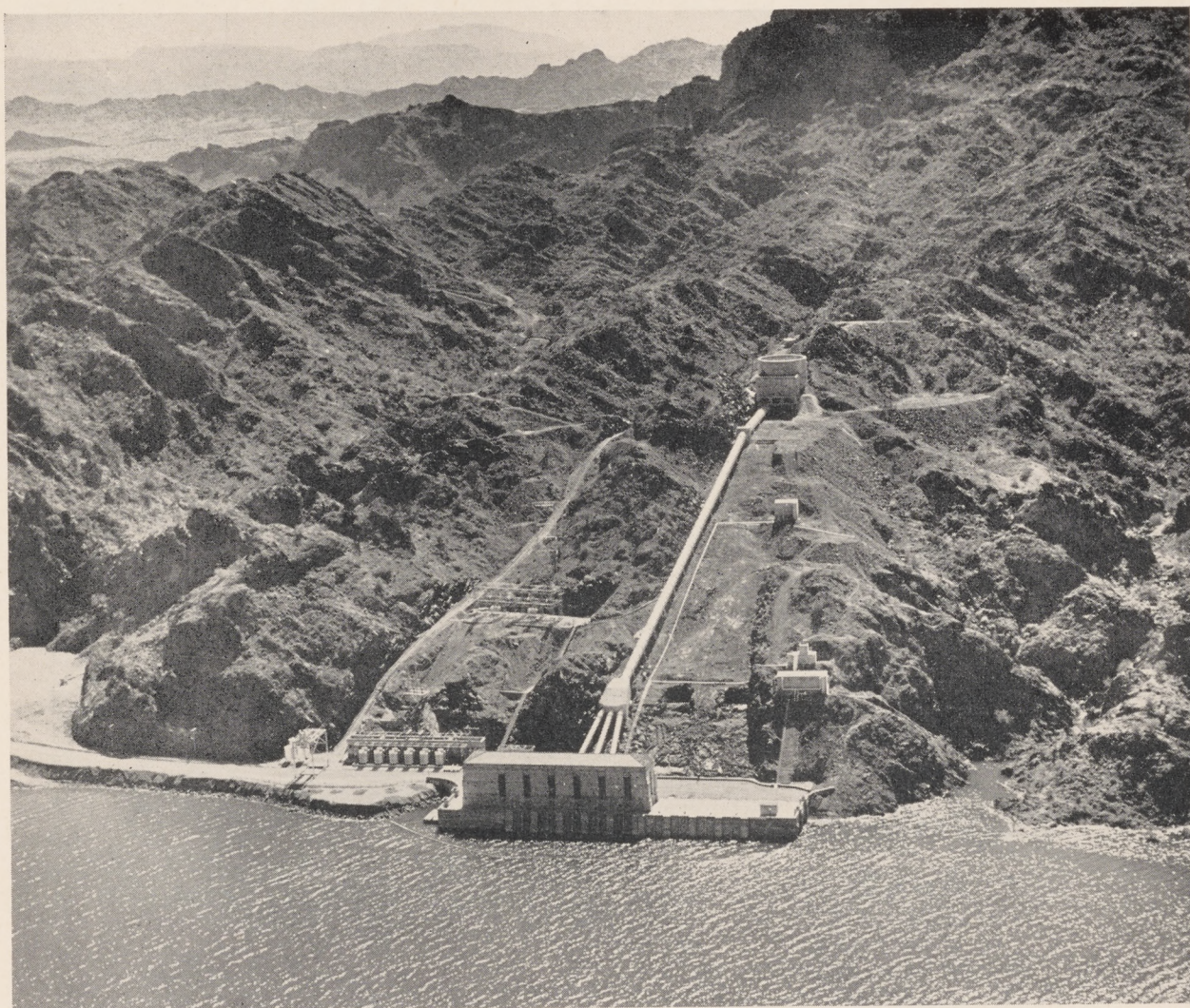


A Los Angeles Municipal Department of Water and Power
B California Electric Power Company

SOUTHERN CALIFORNIA CITIES AND FARMS



- C Southern California Edison Company
- D Metropolitan Water District of Southern California



Intake Pumping Plant of Metropolitan Water District aqueduct on Colorado River

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

The need for the vital substances to sustain human life in Southern California has been enormously increased in the last quarter century by the greatest migration of people in modern times. Since the populated areas of this section of the country are located in an arid region, one of the most pressing requirements has been that of obtaining sufficient water supplies to meet ever increasing demands. During World War II this necessity of providing a sufficient and dependable domestic water supply became even more acute because of the requirements of national defense with its accompanying concentration of fighting forces and supporting military and naval operations.

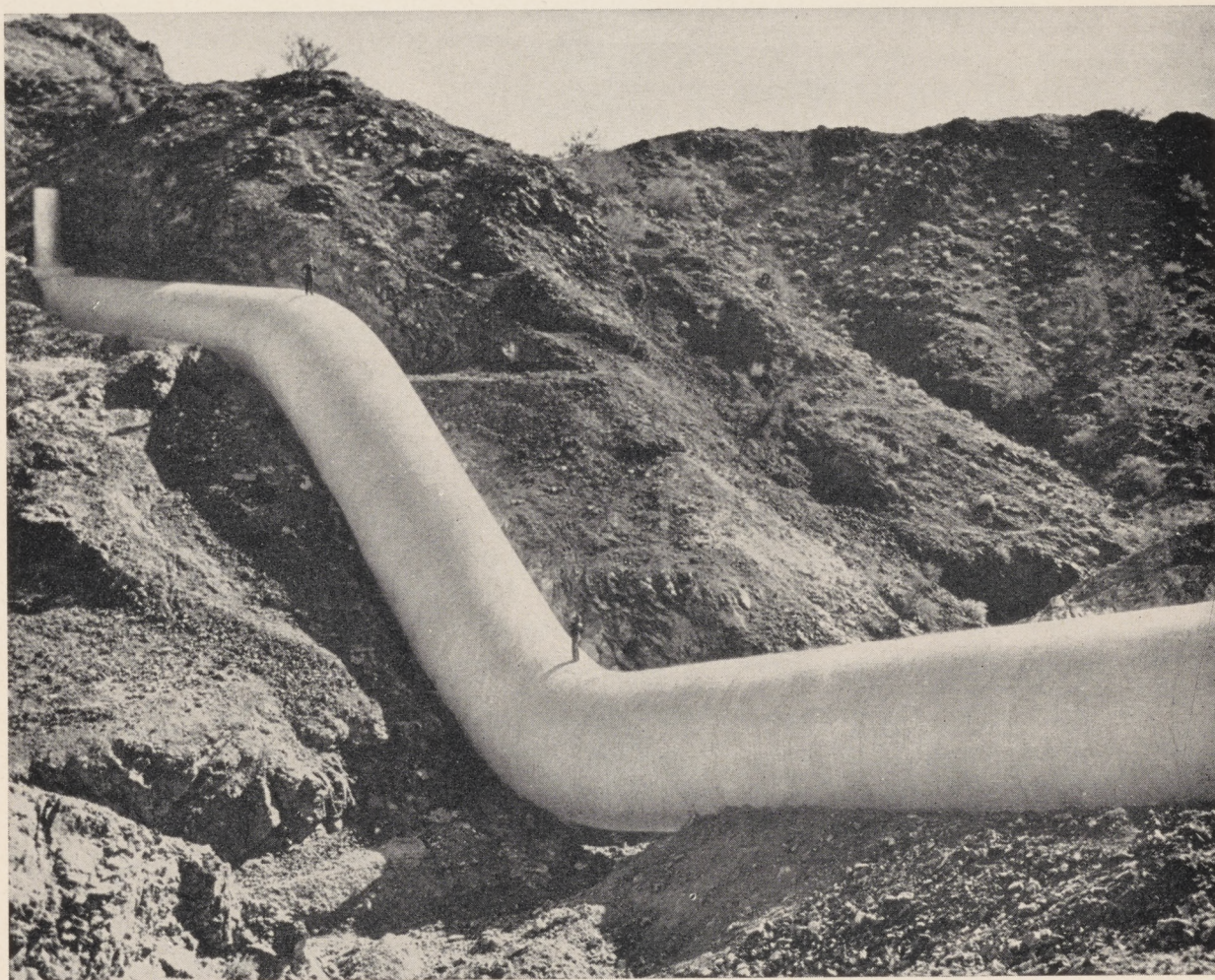
Domestic water to meet these requirements has been provided by a group of California cities that had the courage and foresight to build a great aqueduct system

which delivers water from the Colorado River to homes, industries and military installations on the coastal plain of Southern California.

This Colorado River Aqueduct was built by the group of cities which constitute The Metropolitan Water District of Southern California, to meet their present and future water requirements. Up to date it represents an investment of \$260,000,000. Its ultimate cost will be in excess of \$400,000,000. It is being paid for entirely by the people of these California cities.

COLORADO RIVER AQUEDUCT

The Colorado River Aqueduct is the longest and largest domestic water supply line in the United States. It has its intake on the Colorado River two miles upstream from Parker Dam and extends westward across the State of California. Its total length, including the main line and its delivery lines, is 457 miles. It will have the ultimate capacity to deliver 1,212,000 acre feet of water annually, or more than a billion gallons of water per day. It was constructed during the period from 1932 to 1941 and has been in operation since June 1941.



An inverted siphon section of the Metropolitan Water District's aqueduct, sixteen feet in diameter



Another reason why California needs its share of Colorado River water. El Capitan Reservoir of City of San Diego, 96 per cent empty in the summer of 1948.

Included in the aqueduct system are five pumping plants which lift the water a total height of 1,617 feet over mountain barriers. To operate these pumping plants, the Metropolitan Water District purchases Hoover Dam power from the United States Government and is obligated to pay for 36 per cent of the firm power produced at Hoover Dam power plant on the Colorado River.

In addition to the pumping plants, the aqueduct system includes concrete lined canals, tunnels, covered conduits, inverted siphons, and 8 reservoirs. Principal storage reservoir of the aqueduct system is Lake Mathews, situated near Riverside.

The District in 1930 contracted with the Federal Government for the delivery to the District of Colorado River water up to 1,100,000 acre-feet annually. About the same time, the City and County of San Diego entered into a contract with the Government for 112,000 acre-feet annually. The San Diego areas were annexed to the Metropolitan Water District in 1946, and at that time the San Diego contract was merged with the District's water contract. The result is that the Metropolitan Water District now has a contract

with the Federal Government for 1,212,000 acre-feet of Colorado River water annually, or about one billion gallons of water a day.

At the time the District filed on the Colorado River for the right to divert a share of its flow, the responsible officers of the District had in mind the needs not only of the people residing in the 11 cities which then comprised the District, but they also took into account the supplemental water needs of all the areas on the coastal plain of Southern California that then were under development—and were within the limits of economic water service. In line with this recognition of a general need for Colorado River water by populated areas in Southern California, the boundaries of the Metropolitan Water District have been extended to bring the larger territory within service reach.

DISTRICT CITIES AND AREAS

The Metropolitan Water District embraces the following cities and local water districts: Anaheim, Beverly Hills, Burbank, Compton, Fullerton, Glendale, Long Beach, Los Angeles, Pasadena, San Marino, Santa Ana, Santa Monica, Torrance, Chino Municipal Water District, Coastal Municipal Water District, Eastern Municipal Water District, Foothill Municipal Water District, Orange County Municipal Water District, Pomona Valley Municipal Water District, San Diego County Water Authority, West Basin Municipal Water District.

Within the boundaries of the eight water districts above named are the following incorporated cities: Ontario, Chino, Upland, Fontana, Laguna Beach, Brea, Newport Beach, Costa Mesa, Hemet, Perris, San Jacinto, Buena Park, Huntington Beach, La Habra, Orange, Placentia, Seal Beach, Tustin, Pomona, La Verne, Claremont, Glendora, Chula Vista, El Cajon, Escondido, La Mesa, National City, Oceanside, San Diego, El Segundo, Gardena, Hawthorne, Hermosa Beach, Inglewood, Manhattan Beach, Palos Verdes Estates, Redondo Beach.

Altogether, in March, 1954, there were 50 incorporated cities in the Metropolitan Water District. Also within the District are populous unincorporated areas.

The District has a present population of more than 4,000,000. Another 1,500,000 persons reside in cities and areas near the boundaries of the Metropolitan Water District, and most of these communities are in dire need of Colorado River water, and in a number of instances are now taking steps to obtain this water by annexing to the Metropolitan Water District.

CONTRACT WITH THE GOVERNMENT

The Government, through its Department of the Interior, has contracted permanently to deliver Colorado River water to the Metropolitan Water District up to 1,212,000 acre feet per annum.

California is not asking for more water than its contracts with the Government call for. But California is obliged, because of its limited water supplies and its semi-arid character, to take every proper measure to protect the quantity of Colorado River water for which it holds Government contracts. The most recent of these contracts was made more than 20 years ago.

ALL AMERICAN CANAL

The All American Canal delivers Colorado River water for irrigation and domestic use to the Imperial and Coachella valleys. It has its intake above Imperial Dam, and from this point the main canal extends westward 80 miles, paralleling the Mexican boundary line, which is a few miles to the south. It was built by the United States Bureau of Reclamation. Its cost, amounting to \$78,000,000 with distribution facilities, will be repaid in full by the people of the Imperial Irrigation District and the Coachella Valley County Water District. Imperial Dam is a part of the All American Canal System.

The United States Government, through its Department of the Interior, has contracted permanently to deliver Colorado River water to the Imperial Irrigation District, the Coachella Valley County Water District, the Palo Verde Irrigation District, and the Yuma Irrigation District in California, up to 4,150,000 acre feet annually.

IMPERIAL IRRIGATION DISTRICT

The Imperial Irrigation District is situated in the southeast portion of California. It includes a total gross area of 882,788 acres, of which 500,488 acres are under cultivation. It is the largest irrigation district in the western hemisphere. Within the boundaries of this district are the incorporated cities of El Centro, Calexico, Brawley, Holtville, Imperial, Westmorland, and the unincorporated town of Niland. The District is the sole agency supplying water and power to the Imperial Valley, which has an estimated population exceeding 70,000 and which produced farm products having a valuation of \$153,091,793 in 1952. The District also supplies power for the Coachella Valley.

The principal products of the Imperial Valley are vegetables, melons, alfalfa, flax, sugar beets, cattle, sheep, pasturage, gypsum, citrus fruits, and cotton. Because of the large quantity and high quality of its winter and early spring vegetables and fruits the Imperial Valley is known as "America's Winter Garden."

Before the building of the All American Canal, the farmers of Imperial Valley obtained their irrigation water from the Colorado River via the Alamo Canal, which passed for approximately 60 miles through Mexico. In order to operate the canal on Mexican soil, they were required to make one-half of its water available to land owners in Mexico.

Prior to the construction of Hoover Dam these Imperial Valley farmers sought to protect their homes and crops from annual Colorado River floods by building scores of miles of levees in Mexico at a cost to them of many millions of dollars.



A section of the Coachella branch of the All American Canal



A winter vegetable crop typical of production in the Imperial, Coachella and Palo Verde districts.

COACHELLA VALLEY COUNTY WATER DISTRICT

Coachella Valley County Water District is situated west and north of the Salton Sea in California. It includes 136,000 acres, of which 43,828 are now under cultivation. Within this District are the cities of Indio, Coachella, and Thermal, and it has a population of 19,415.

Water to irrigate the lands of the Coachella Valley originally was obtained by the development of ground water in that area. This water supply is insufficient to meet the valley's present requirements and to make possible feasible extension of fertile territory. To meet the urgent water needs of the Coachella Valley there has recently been completed what is known as the Coachella branch of the All American Canal.

The principal agricultural products of the Coachella Valley are dates, grapefruit, grapes, vegetables, alfalfa and cotton, which in 1952 had a value of \$21,730,575.

PALO VERDE IRRIGATION DISTRICT

The Palo Verde Irrigation District is situated in and around the city of Blythe, California. It includes 119,000 acres, of which 66,500 are under cultivation, and it has a population of approximately 11,000.

This District obtains its irrigation water from the Colorado River and has one of the oldest water diversion rights on the entire river system. Use of Colorado River water for the irrigation of lands in the Blythe area dates back to 1877.

Principal agricultural products of the Palo Verde District are alfalfa, alfalfa seed, cotton, vegetables, and melons, which in 1952 had a value of \$15,013,000.

PARKER DAM

Parker Dam on the Colorado River was constructed to reregulate the flow of the river below Hoover Dam and to provide a storage reservoir from which water is taken into the Colorado River Aqueduct. The cost of Parker Dam and power plant was approximately \$13,000,000. Of this amount, citizens of the Metropolitan Water District of Southern California paid \$12,400,000 and the Government, through the Public Works Administration, \$600,000.

Parker Dam, situated 155 miles downstream from Hoover Dam, has created a reservoir extending 50 miles upstream with a capacity of 717,000 acre feet. It frequently is referred to as "the deepest dam in the world" for the reason that it extends 242 feet below stream level to bedrock, while its height above stream level is about 70 feet. Its power plant has an installed capacity to produce 100,000 kilowatts of energy.

OFFICIAL FIGURES SHOW NO COLORADO RIVER WATER AVAILABLE FOR CENTRAL ARIZONA PROJECT

Data from U. S. Bureau of Reclamation March 1946 Report, "The Colorado River," App. I, pp. 282-283, except as noted. Lee Ferry is division point between Upper and Lower Basins.

WATER SUPPLY

	Acre Feet
Colorado River average (1897-1943 period) annual virgin or undepleted flow at Lee Ferry.....	16,270,000
Upper Basin allocation by Colorado River Compact.....	-7,500,000
Lower Basin's available supply at Lee Ferry..... (estimated long-time average, which would be reduced to 7,500,000 a.f. as a 10-year average in severe drought periods)	8,770,000
Net average gain (less river losses) of Lower Basin tributaries, except Gila River.....	+400,000
Main stream reservoir losses, Lake Mead, etc..... (U.S.B.R. estimate, including Davis and Bridge Canyon projects)	-870,000
Lower Basin available supply from main Colorado River.....	8,300,000
Gila River Basin of Arizona net beneficial consumptive use.....	2,300,000
Probable salvage of natural main stream losses, Upper and Lower Basins.....	300,000
Lower Basin total average available supply.....	10,900,000

WATER REQUIREMENTS

	Acre Feet
Nevada—contract with U. S., plus a possible claim on portion of surplus.....	300,000
Utah and New Mexico—portions in Lower Basin U.S.B.R. estimate, but these states' claims may be greater.....	138,000
Mexico—including regulation losses, estimated not less than average of.....	1,700,000
California—operating projects, by contracts with U. S.....	5,362,000
Arizona—Gila Basin present use.....	2,300,000
Yuma Project in Arizona.....	200,000
Parker Valley Indian lands.....	300,000
Little Colorado River and other tributaries.....	90,000
Mojave Valley, etc., on Colorado River.....	10,000
Gila Project (new) from Colorado River.....	600,000
Total for present and authorized projects..... (does not include 1,200,000 a.f. annually called for by the proposed Central Arizona Project)	3,500,000
Lower Basin total for present and authorized projects.....	11,000,000
Lower Basin total average available supply.....	10,900,000
Deficit indicated on long-time average basis..... (amount of beneficial consumptive use on the Gila River is in controversy, but this does not affect the main stream deficit because the figure for such beneficial con- sumptive use, no matter what it may be, appears on both the credit and debit sides of the computation)	100,000
The figure of 100,000 is based upon U. S. Bureau of Reclamation records up to 1943. Low flows on the river since that date increase the deficit to.....	300,000
(Note: Despite the ultimate deficit of from 100,000 to 300,000 a.f. now confronting operating and authorized projects, the proposed Central Arizona Project seeks to take another 1,200,000 a.f. annually.)	

WHY ARIZONA'S PROJECT IS OPPOSED

Arizona interests have made repeated attempts to get bills through Congress for what is known as the Central Arizona Project. It would require more than \$700,000,000 in public funds to build the Project and it would cost the nation's taxpayers \$2,075,729,000 in interest charges alone on the construction costs.

That heavy tax burden is in striking contrast to California's Colorado River project developments described in the preceding pages. The people of California are paying for their projects, while Arizona expects the people in all the other states to subsidize its proposed project. Arizona, for example, would pay only \$7,680,000, or less than 1%, of the \$2,075,729,000 tax costs to the people of the United States.

The Central Arizona Project is a so-called reclamation project to take Colorado River water to 226,000 acres of land in the central part of the state, near Phoenix. However, it is not a true reclamation program because all the land to be served already is privately held. No new land will be available for war veterans or other citizens.

Principal features of this proposed project are: (1) Bridge Canyon Dam and Power Plant, about 120 miles above Hoover Dam on the Colorado River; (2) Parker Pump Lift, to raise Colorado River water a total height of 985 feet for irrigation purposes; (3) Aqueducts and canals to transport water 300 miles to grow ordinary field crops, such as hay, potatoes and cotton.

The cost to put water on the 226,000 acres involved is \$1,838 an acre, although the value of land for general farming purposes in Arizona is less than \$300 an acre with water on it. It is an obvious waste of taxpayers' money to spend six times as much as land is worth in order to increase its water supply. This is especially true when many of the crops raised in Arizona are already surplus and would require further tax subsidies.

Authority for the \$2,075,729,000 tax cost of the proposed Arizona irrigation project is former Secretary of the Interior Oscar L. Chapman. It was an estimate he made in an official report to a House Committee on June 28, 1950, when asked by the Committee what tax burden would be created by the Arizona Project.

Using percentage tables secured from the Council of State Chambers of Commerce in Washington, D. C. the tax cost of the Arizona Project to each state was found. Tax maps showing what citizens of each state would have to pay in order to subsidize Arizona land owners will be mailed free upon request to the Colorado River Association, 306 West 3rd Street, Los Angeles 13, California.

COMPARISON OF WATER USE

The 1,212,000 acre feet of water contracted for by the cities of Southern California will serve the needs of at least 5,000,000 men, women and children.

The same amount of water is claimed by Arizona for irrigation purposes, where it would serve not more than 4,000 farms, with a total population of 25,000 or less.

IN TERMS OF PEOPLE, THE COLORADO RIVER CONTROVERSY INVOLVES A WATER SUPPLY FOR EITHER 5,000,000 CALIFORNIANS OR 25,000 ARIZONANS.

LEGAL CLOUD OVER ARIZONA PLAN

The two billion dollars in taxes that the Central Arizona Project would cost the people of America, as mentioned on the facing page, would alone condemn it in many minds. The proposal becomes even more fantastic when it is known that there is serious legal question about Arizona's rights to the water it wants to deliver through the costly irrigation system.

In an official report made to Congress by the Secretary of the Interior in 1948 he stated that there would be no water available for the Central Arizona Project if the contentions of California concerning the Colorado River controversy are correct. In other words, Arizona has advocated spending hundreds of millions of dollars of taxpayers' money for a Project for which the water supply is in doubt. California, on the other hand, has advocated settling the vital water rights question before any new Arizona Project is authorized by Congress.

Since this is an interstate dispute, the United States Supreme Court is the only avenue of settlement afforded under the Constitution. Beginning in 1947 California introduced bills in three successive Congresses asking permission of Congress to place the Colorado River issue before the highest court of the land. Arizona fought this fair and legal means of settling the dispute for 5 years. After that long delaying tactic, Arizona reversed its position and in August, 1952, filed an action in the Supreme Court seeking a larger share of Colorado River water and attacking California's long-established water rights.

California welcomes the opportunity to defend the Colorado River water supply that serves its homes and industries. California is confident that its contracts, made in good faith with the Federal Government, will be sustained by the Supreme Court. If that happens, it would serve notice that there is no water available for the proposed new Arizona Project. But even if Arizona should win on the legal points, it would still be necessary for the landowners in that state to convince the citizen taxpayers of all the other states that there is any moral or economic justification for levying a tax burden of more than \$2,000,000,000 on the entire nation in order to benefit a few thousand individuals in Arizona.

Certainly, as long as there is a legal cloud over Arizona's Colorado River water claims, no costly project for water diversion on the lower Colorado should be authorized. That is especially true of the Central Arizona Project.

COLORADO RIVER ASSOCIATION

The Colorado River Association is a nonpartisan, nonprofit organization of citizens from all sections of California and from forty-three other states.

Acting in behalf of the Colorado River Board of California and the member agencies of that board, the Association is carrying forward an educational program to inform the people of the United States of existing and proposed water and power developments

on the lower Colorado River. The Association's service to the public includes reports showing the tax burden that uneconomic proposals such as the Central Arizona Project would impose upon the nation.

Members of the Association are representatives of business, industry, agriculture, labor, the professions, women's organizations, and numerous civic, patriotic, educational and service groups.

Hoover Dam backs up the waters of the Colorado River to form Lake Mead, largest man-made lake in the world. Life-giving water for homes, farms and industries of Southern California comes from this source.

—U. S. AIR FORCE PHOTO

